



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D119-646-243
Job Sheet 180146



Part No: D119-646-243

Job Qty: 1 ea

Part Name: AW119 Repl. Skidtube with Heavy Duty Wearplates, Float Compatible -Fits LH or RH



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 6/29/18

Job Tracking No:

Due Date: 8/6/18

Created By: Marie Lajeunesse

Type: SOLD

Description:

Note: DWG IIN-D119-646 REV D, D3905-045 REV E SHEETS 4,5, 7-14 IPP RevA: New issue DD verified by:EC
IPP REV B 12.11.05 (DEOD3905-B-1)(ecn 12-675) DD verf:JLM IPP REV:C 13.03.20 per chg003 ECN13-534
DD verf:JLM IPP REV:D 15.01.19 AS PER ECN-14-628 DD verf:JLM IPP REV:E 16.11.02 chg as per D3905
revD(DEO) DD verf:JLM IPP REV:F 17.05.19 as per dwg D3905 rev.e DD verf:JFS

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea		8/6/18	0.00	0.00	Start Up Skidtubes-1		
110	Skidtubes	1 pcs		8/6/18	0.00	2.07	Skidtubes-1		
120	HandFinish	1 pcs		8/6/18	0.00	1.05	HandFinish1		SA 8-07-09
130	QC	1 pcs		8/6/18	0.00	0.00	QC7-1		MbG
150	Skidtubes	1 pcs		8/6/18	0.00	2.07	Skidtubes-1		MbG
155	CNC Bend Skidtubes	1 pcs		8/6/18	0.00	1.20	CNC Bend Skidtube		MbG
165	QC	1 pcs		8/6/18	0.00	0.00	QC5		BE
180	Skidtubes	1 pcs		8/6/18	0.00	2.07	Skidtubes-1		MbG
190	QC	1 pcs		8/6/18	0.00	0.00	QC5		BE
200	CNC Bend Skidtubes	1 pcs		8/6/18	0.00	1.20	CNC Bend Skidtube		MbG
210	Skidtubes	1 pcs		8/6/18	0.00	1.41	Skidtubes-1		MbG
220	QC	1 pcs		8/6/18	0.00	0.00	QC5		BE
224	Skidtubes	1 pcs		8/6/18	0.00	3.70	Skidtubes-1		BE MbG
225	QC	1 pcs		8/6/18	0.00	0.00	QC5		BE
226	QC	1 pcs		8/6/18	0.00	0.00	QC10		BE 10-08-03
227	HandFinish	1 pcs		8/6/18	0.00	1.05	HandFinish2		BE 12-08-23
240	SprayPaint	1 pcs		8/6/18	0.00	0.56	Spray Paint		BE 18-08-04
242	Outsource	1 pcs		8/6/18			ATE003-VC	5	BE 18-08-19
245	QC	1 pcs		8/6/18	0.00	0.00	QC14		BE 18-08-19
250	HandFinish	1 pcs		8/6/18	0.00	1.05	HandFinish4	005044	BE 18-08-20
260	QC	1 pcs		8/6/18	0.00	0.00	QC5		BE 12-08-20
270	HandFinish	1 pcs		8/6/18	0.00	1.49	HandFinish4	005051	BE 18-08-20
280	QC	1 pcs		8/6/18	0.00	0.00	QC5		BE 12-08-20
285	HandFinish	1 pcs		8/6/18	0.00	1.05	HandFinish3		BE 18-08-20
286	QC	1 pcs		8/6/18	0.00	0.00	QC5		AUG 20 2018
288	DC	1 pcs		8/6/18	0.00	0.00	DC		38
290	Packaging	1 pcs		8/6/18	0.00	0.00	Packaging3-1		9-89
300	QC21-FG	1 Ea		8/6/18	0.00	0.00	QC21		

Part Op 110 - 1- Inspect Mat'l D2500-1-190 for damage 2- Ensure squareness of ends
Descriptions: 120 - Chemical Conversion Coat per QSI005 4.1
130 - QC7-Inspect Chemical Conversion Coat

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION	AGAINST DEPARTMENT/PROCESS			
	Rework ☐	Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐
	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐
	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
	Suspected Unapproved ☐	Large Fab ☐	Composite ☐	Supplier ☐	

Date :	Step #:	QTY Effective :	MRB (QSI042) Approval
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Description Work Order Deviation

 Container No: S089683 Part: D119 - 646 - 243 Job No: 180146 Serial No/Batch: S089683 Revision: _____ Inspector: _____ Exp Date: _____ Instructions: _____ Date: 07/06/18		

Root Cause			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	
Design ☐	Operator ☐	Bending ☐	
Doc/Data ☐	Offset/Setup ☐	Centre Not Conc ☐	
Equip/Tooling ☐	Supplier ☐	Cracks ☐	
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/wave ☐	
Material ☐	Use for Testing ☐	Cuffs ☐	
Internal Transport ☐	Poor Information ☐	Crushing ☐	
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	
Past Expiry Date ☐	Manufacturing Process ☐		
Misidentified ☐	Past Due ☐	OTHER : ☐	

150 - 1- Install drill jig DT9480 drill all x-bolt spacer holes using 3/16 drill first side only. 2- 2nd side, locating from first saddle holes use DT9861 A/B to drill 2nd side fwd saddle holes. 3- 2nd side locating from fwd saddle drill remaining crossbolt spacer holes using DT9477 4- Scribe batch # inside aft end of tube

155 - 1- Bend AFT end of tube using CNC Bender 1 and bend prog. D3905 AFT as per dwg D3905. Must use bending Aid DT9538, located 23.25" from Aft end. 2- Ensure bending Aid DT9538 is positioned correctly, that the bender set up in on full wide and that the indexing ridge is covered with graphite grease.

165 - QC5- Inspect part completeness to step on W/O

180 - 1- Verify dimension of bend as per dwg D3905 2- Buff out marks left from bending. 3- Drill Aft Float bag holes using DT9493 as per dwg D3905 detail G and section F-F, open to finished size 4- Open x-bolt spacer holes to finished size as per dwg (sections D-D and E-E) ***DO NOT OPEN FWD SADDLE HOLES*** 5- Drill Aft wearplate and wearpad holes using DT9546 and DT9545 as per dwg D3905 detail G open to finished size 6- Deburr, blow out chips from inside of tube 7- Bond web in place as per Dwg D3905 & QSI 015. A/R Sikaflex-291 M138874 Sikaflex expire date: 03-06 Start: _____ Time: _____ Finish: _____ Time: _____ ***** (Adhere for 12 hours) *****

190 - QC5- Inspect part completeness to step on W/O

200 - 1- Bend Fwd end of tube using bender 1 and bend prog. D3905 & Folio -04 Fwd. Use bending aid DT9544 ensure proper positioning 2- Cut Fwd end of tube as per dwg. ***VERIFY MEASUREMENT BEFORE CUTTING***

210 - 1- Buff out marks left from bending 2- Drill Fwd cap holes using DT8215. 3- Open Fwd saddle holes to finished size as per dwg 4- Drill Fwd x-bolt hole and open to finished size using DT9816 5- Drill 1.87" and 3.74 holes using DT10045 A&B locate from FWD saddle hole. (verify measurement) as per dwg. 6- Drill towing hole using DT10047 locate from FWD saddle hole and open to finished size. 7- C'sink FWD cap hole as per detail "C" 10- Deburr, blow out chips from inside of tube.

220 - QC5- Inspect part completeness to step on W/O

224 - NOTE: TACK IN 2 MOST FWD X-BOLT SPACERS AND TEST FIT FWD GROUND HANDLING FIXTURE, IF FIXTURE FITS WELL THEN PROCEED. FIXTURE DT10091. 1- Countersink x-bolt holes as per dwg 2- Remove alodine prepare for welding 3- Insert x-bolt spacers 4- Weld x-bolt spacer as per dwg A/R Alum rod Batch: 138834 5- Grind welds flush as per dwg 6- Counter bore x-bolt holes as per dwg 7- Deburr 8- Pick D2855-5 cap and transfer drill missing hole. Deburr and identify cap with skidtube batch#.

225 - QC5- Inspect part completeness to step on W/O TEST FIT USING FIXTURE DT10091.

226 - QC10- Inspect visual per QSI004- ground welds

227 - Pressure Wash per QSI005 4.3

240 - Spray Painting per QSI005 4.2 *****AS PER DEO DETAIL "F" NOTE 8, SHEET 8 MASK THIS AREA, DO NOT APPLY PRIMER OR PAINT***** PRIME AS PER DWG AND QSI 005 4.2 BATCH: 138862 PAINT WHITE AS PER DWG AND QSI 005 4.2 BATCH: 138910

245 - QC14- Inspect Spray Paint

250 - Assemble as per dwg 1- Install inserts as per Dwg D3905.

260 - QC5- Inspect part completeness to step on W/O

270 - 1- Install wearpads, gaskets and wearplates as per Dwg D3905. Put sikaflex in insert before installing bolts and washers A/R Sikaflex-240/-291 M138874 Sikaflex expire date: 06/19 2- install plugs assembly as per dwg. 3- Inspect for foreign objects as per QSI 024 4- Install D2855-3 Cap and seal with Sikaflex. Clean excess adhesive. A/R Sikaflex-240/-291 M138874 Sikaflex expire date: 06/19 5- Install insert in D2855- Cap. Install cap and seal with Sikaflex. Clean excess adhesive. A/R Sikaflex-240/-291 M138874 Sikaflex expire date: 06/19 6- Install (2) D5101-041 and (1) D5101-047 as per dwg by using DT10117

280 - QC5- Inspect part completeness to step on W/O

285 - Wing Walk as per dwg QSI005 4.4 Batch 5098120

286 - QC5- Inspect part completeness to step on W/O

288 - Document Control Photocopy bluefile & type labels per PPP D119-646-243 CHG 005

290 - Identify as per dwg & Stock Location: _____

300 - QC21- Final Inspection - Work Order Release

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D2500-1-190	Ext'n -I' Beam Tube 4"	1 Ea (1 ea)	90-Start up Operation	
D3681-1	Spacer	8 Ea (8 ea)	90-Start up Operation	<u>5084724</u>
D3903-1	Spacer	12 Ea (12 ea)	90-Start up Operation	<u>5084655</u>
D3885-3	Float Web	1 Ea (1 ea)	180-Skidtubes	<u>5096470</u>
D2579	Crossbolt Spacer	2 Ea (2 ea)	224-Skidtubes	<u>5051552</u>
D2855-5	Cap	1 Ea (1 ea)	224-Skidtubes	<u>5066894</u>
ALS4-1032-130	Rivnut	10 Ea (10 ea)	250-HandFinish	<u>5058138</u> SO 07279.
ALS4-1032-225	Rivnut	1 Ea (1 ea)	270-HandFinish	<u>5058138</u>
AN3C46A	Bolt	4 Ea (4 ea)	270-HandFinish	<u>5095398</u>
AN3C50A	Bolt	4 Ea (4 ea)	270-HandFinish	<u>5079135</u>
AN3C5A	Bolt	12 Ea (12 ea)	270-HandFinish	<u>5095214</u>
AN4C46A	Bolt	3 Ea (3 ea)	270-HandFinish	<u>5093600</u>
D2855-3	Cap	1 Ea (1 ea)	270-HandFinish	<u>5066002</u>
D3411-3	Washer	16 Ea (16 ea)	270-HandFinish	<u>5099749</u>
D3672-1	Washer, Phenolic	2 Ea (2 ea)	270-HandFinish	<u>1x F150 074 / 1x F163 255-1</u>
D3847-1	Wearpad	1 Ea (1 ea)	270-HandFinish	<u>5084440</u>
D3847-11	Wearpad	1 Ea (1 ea)	270-HandFinish	<u>5058269</u>

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Description Work Order Deviation				Disposition				Completed By																	
								Lead hand / Supervisor Approval Verification																	
								QC / QA Coordinator Approval																	
Root Cause		FAULT CATEGORY																							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐		Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐		Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐																	
OTHER : ☐																									

D3849-045	Run-on Landing Wearplate Aft For Float Skidtubes	1 Ea (1 ea)	270-HandFinish	5089093.
D3849-047	Run-on Landing Wearplate Fwd For Float Skidtubes	1 Ea (1 ea)	270-HandFinish	5103103.
D3904-1	Washer	16 Ea (16 ea)	270-HandFinish	5091775
D5101-041	Crossbolt Spacer Assembly	2 Ea (2 ea)	270-HandFinish	F159549.
D5101-047	Crossbolt Spacer Assembly	1 Ea (1 ea)	270-HandFinish	5103114
D5101-3	Insert	6 Ea (6 ea)	270-HandFinish	F158939.
D5101-5	Insert	6 Ea (6 ea)	270-HandFinish	F158796.
MS21043-3	Nut	8 Ea (8 ea)	270-HandFinish	5062620
MS21043-4	Nut	3 Ea (3 ea)	270-HandFinish	5089277
MS24694-C52	Screw	2 Ea (2 ea)	270-HandFinish	5067269-1
NAS1149C0332R	Washer	8 Ea (8 ea)	270-HandFinish	5071663.
NAS1149D0416J	Washer	3 Ea (3 ea)	270-HandFinish	F1131511

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D2500-1-190	1	37	0
	D3681-1	8	219	0
	D3903-1	12	190	0
180-Skidtubes	D3885-3	1	2	0
224-Skidtubes	D2579	2	175	0
	D2855-5	1	81	0
250-HandFinish	ALS4-1032-130	10	13,354	0
270-HandFinish	ALS4-1032-225	1	4,225	0
	AN3C46A	4	122	0
	AN3C50A	4	159	0
	AN3C5A	12	2,030	0
	AN4C46A	3	83	0
	D2855-3	1	26	0
	D3411-3	16	24	0
	D3672-1	2	1,076	0
	D3847-1	1	80	0
	D3847-11	1	21	0
	D3849-045	1	0	0
	D3849-047	1	3	0
	D3904-1	16	90	0
	D5101-041	2	14	0
	D5101-047	1	5	0
	D5101-3	6	56	0
	D5101-5	6	42	0
	MS21043-3	8	1,157	0
	MS21043-4	3	425	0
	MS24694-C52	2	187	0
	NAS1149C0332R	8	5,107	0
	NAS1149D0416J	3	2,986	0

Part Specifications

Specifications could not be found.

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:15%;">Skid-tube ☐</td> <td style="width:15%;">Cross tube ☐</td> <td style="width:15%;">Water Jet ☐</td> <td style="width:15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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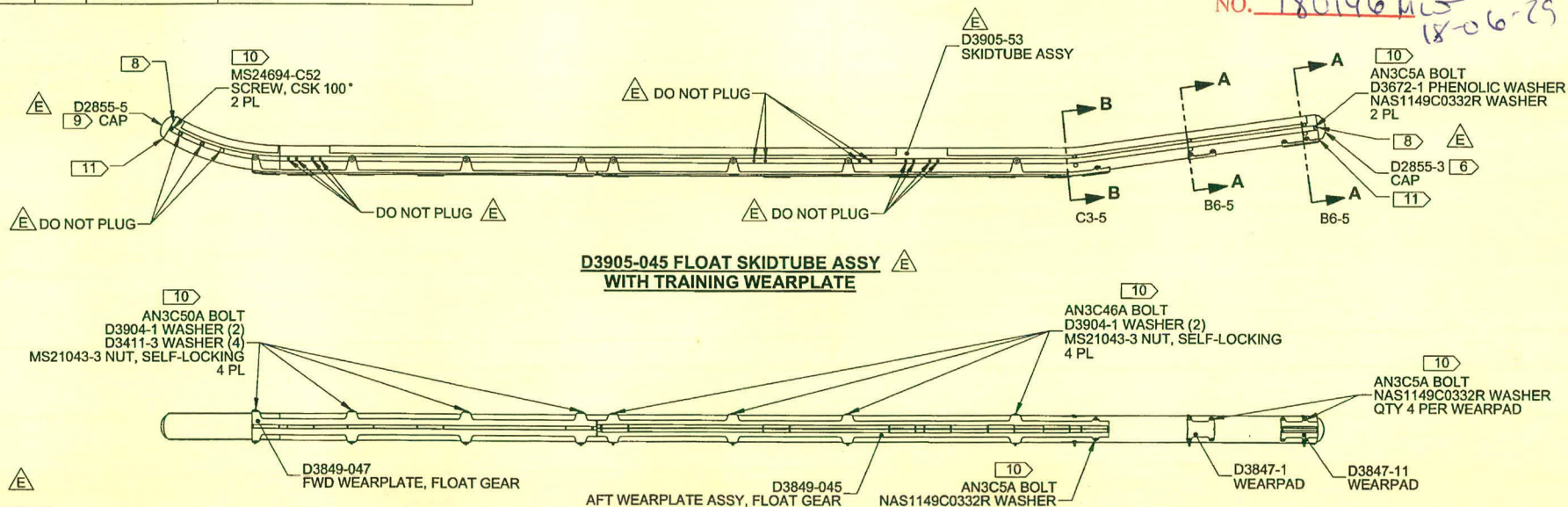
Description Work Order Deviation	Disposition	
		Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval

Root Cause	FAULT CATEGORY																																																																	
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ITEM	QTY -045	P/N	DESCRIPTION
	X	D3905-045	FLOAT SKIDTUBE ASSY
1	1	D2855-3	CAP
2	1	D2855-5	CAP
3	16	D3411-3	WASHER
4	2	D3672-1	PHENOLIC WASHER
5	1	D3847-1	WEARPAD
6	1	D3847-11	WEARPAD
7	1	D3849-045	AFT WEARPLATE ASSY, FLOAT GEAR
8	1	D3849-047	FWD WEARPLATE, FLOAT GEAR
9	16	D3904-1	WASHER
10	1	D3905-053	SKIDTUBE SUB ASSEMBLY
11	2	D5101-041	CROSSBOLT SPACER ASSY
12	1	D5101-047	CROSS BOLT SPACER
13	6	D5101-3	INSERT
14	6	D5101-5	INSERT

ITEM	QTY -045	P/N	DESCRIPTION
15	1	ALS4-1032-225	INSERT
16	12	AN3C5A	BOLT
17	4	AN3C46A	BOLT
18	4	AN3C50A	BOLT
19	3	AN4C46A	BOLT
20	8	MS21043-3	NUT, SELF-LOCKING
21	3	MS21043-4	NUT, SELF-LOCKING
22	2	MS24694-C52	SCREW, CSK 100°
15	12	NAS1149C0332R	WASHER
24	6	NAS1149D0416J	WASHER

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RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 180146 18-06-29



D3905-045 FLOAT SKIDTUBE ASSY WITH TRAINING WEARPLATE

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3905-045" AND BATCH NUMBER PER QSI 044 6.4 ON THE ID OF THE TUBE, BEFORE INSTALLING THE AFT D2855-3 CAP
- 7) WEIGHT: 48.0 lbs
- 8) RELIEVE INNER RIDGE OF EXTRUSION, AS NEEDED, TO ALLOW FOR INSTALLATION OF D2855-3 AND D2855-5 CAP ASSY, ALODINE BARE MATERIAL
- 9) USE D3905-053 SKIDTUBE ASSY TO LOCATE AND BACKDRILL UNDRILLED INSERT HOLE INTO D2855-5 CAP, OPEN HOLE TO $\phi 0.297$, ALODINE BARE MATERIAL AND INSTALL ALS4-1032-225 (OR AKS7-1032-225, OR ALS7-1032-225, OR AKS4-1032-225) INSERT ON INSIDE OF CAP.
- 10) SEAL FASTENERS WITH SIKAFLEX -241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT
- 11) SEAL MATING SURFACES WITH SIKAFLEX -241/291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT

RELEASED
2017-05-08

APPROVED

DESIGN	AJS	DART AEROSPACE USA, INC.	
DRAWN	WK	EUGENE, OR	
CHECKED	VS	DRAWING NO.	REV. E
MFG. APPR.	DD	D3905	SHEET 4 OF 14
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	A119 FLOAT SKIDTUBE ASSY	NTS
DATE	17.03.13	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRELIMINARY AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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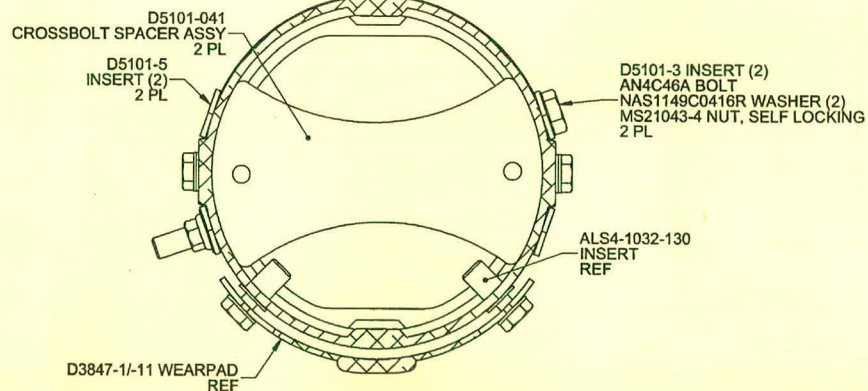
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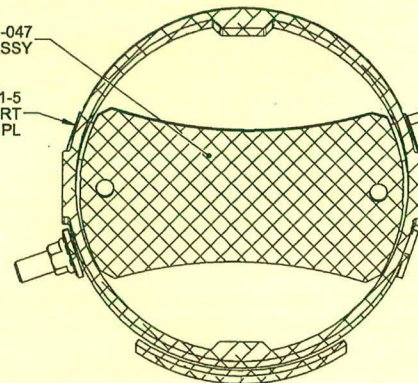


SECTION A-A
SCALE: 12X

D5101-047
CROSSBOLT SPACER ASSY

D5101-5
INSERT
2 PL

D5101-3 INSERT (2)
AN4C46A BOLT
NAS1149C0416R WASHER (2)
MS21043-4 NUT, SELF LOCKING



SECTION B-B
SCALE 12X

RELEASED
2017-05-08

APPROVED

DESIGN	AJS	DART AEROSPACE USA, INC.	
DRAWN	WK	EUGENE, OR	
CHECKED	VS	DRAWING NO.	REV. E
MFG. APPR.	DD	D3905	SHEET 5 OF 14
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	A119 FLOAT SKIDTUBE ASSY	NTS
DATE	17.03.13	COPYRIGHT © 2009 BY DART AEROSPACE USA, INC.	
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DQA: _____ Date: _____



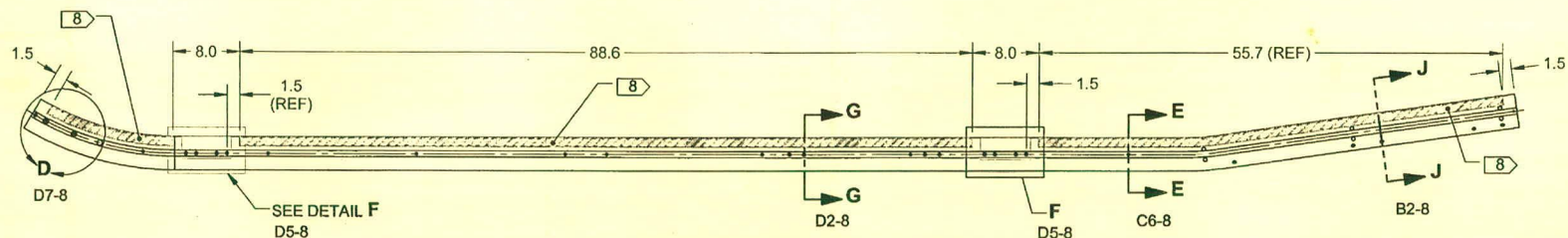
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QA Closed: _____ Date: _____

Work Order update only ☐

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Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																		
Description Work Order Deviation				Disposition				Completed By																	
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Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐																				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐																				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐																				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐																				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐																				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐																				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____																							
Misidentified ☐	Past Due ☐																								

ITEM	QTY	P/N	DESCRIPTION
	X	D3905-053	SKIDTUBE SUB ASSY
1	2	D2579	CROSS BOLT SPACER
2	8	D3681-1	SPACER
3	12	D3903-1	SPACER
4	1	D3905-063	SKIDTUBE SUB ASSEMBLY
5	10	ALS4-1032-130	INSERT



D3905-053 SKIDTUBE SUB ASSEMBLY

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: PRIME (REF 4.2.1.3.3) AND PAINT WHITE PER DART QSI 005 4.2.2.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY AT NEXT ASSEMBLY
- 7) WEIGHT: N/A
- 8) AFTER APPLICATION OF FINISH, PAINT TOP SURFACE OF SKIDTUBE WITH MIL-W-5044 ANTI-SKID PAINT (WING WALK) AS INDICATED TO 0.50" ABOVE LOCATION RIDGE, PER QSI 005 SECTION 4.4

RELEASED
2017-05-08

APPROVED

DESIGN	AJS	DART AEROSPACE USA, INC.	
DRAWN	WK	EUGENE, OR	
CHECKED	VS	DRAWING NO.	REV. E
MFG. APPR.	DD	D3905	SHEET 7 OF 14
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	A119 FLOAT SKIDTUBE ASSY	NTS
DATE	17.03.13	COPYRIGHT © 2009 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

DQA: _____ Date: _____

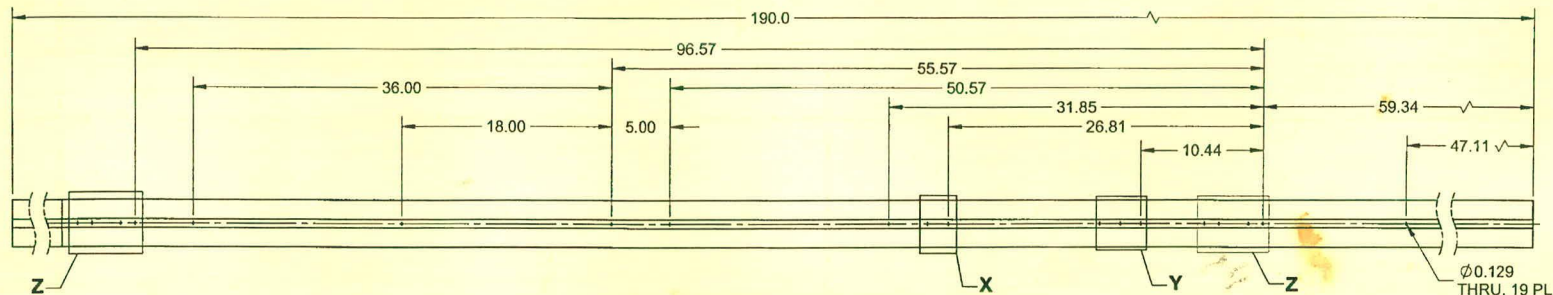


WORK ORDER NON-CONFORMANCE / UPDATE

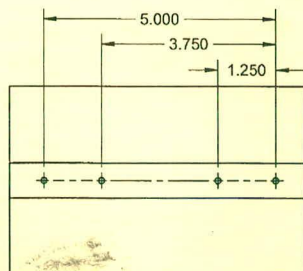
QA Closed: _____ Date: _____

Work Order update only ☐

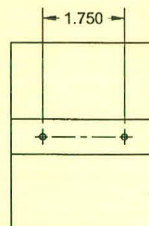
Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">Skid-tube ☐</td> <td style="width: 15%;">Cross tube ☐</td> <td style="width: 15%;">Water Jet ☐</td> <td style="width: 15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																							
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Large Fab ☐	Composite ☐	Supplier ☐																																																													
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval																																																								
Description Work Order Deviation				Disposition				Completed By																																																							
								Lead hand / Supervisor Approval Verification																																																							
								QC / QA Coordinator Approval																																																							
Root Cause				FAULT CATEGORY																																																											
Environment ☐	Design ☐	Doc/Data ☐	Equip/Tooling ☐	Handling/Pre ☐	Material ☐	Internal Transport ☐	Tribal Knowledge ☐	LOA ☐	Substation ☐	Past Expiry Date ☐	Misidentified ☐	No Re-verification ☐	Operator ☐	Offset/Setup ☐	Supplier ☐	Training ☐	Use for Testing ☐	Poor Information ☐	Rushing ☐	Product Improvement ☐	Process Improvement ☐	Manufacturing Process ☐	Past Due ☐	Pressure/Forced ☐	Bending ☐	Centre Not Concentric ☐	Cracks ☐	Crimp/Kink/Ripple/Wave ☐	Cuffs ☐	Crushing ☐	Heat Treat ☐	Wave/Twist in Tube ☐	Marks/Chatter ☐	Temperature/Cure ☐	Set-up ☐	BOM/Route ☐	Broken/Damage/Defect ☐	Inspection Incomplete/Unqualified ☐	Contamination ☐	Countersink ☐	Cut Too Short ☐	Instructions Incomplete/Unclear ☐	Drill Holes ☐	Power Loss/Surge ☐	Folio/Program ☐	Grain ☐	Weld ☐	Wrong Stock Pulled ☐	Out of Sequence ☐	Off-set ☐	Mislabeled ☐	Fit/Function ☐	Misaligned/off center ☐	Positioned Wrong ☐	Outside Dimensions ☐	Over/Under tolerance ☐	Part Incorrect ☐	Part Lost/Missing ☐	Part Moved ☐	Drawing ☐	Finish ☐	Misread ☐	Turning Sequence ☐
OTHER : _____																																																															



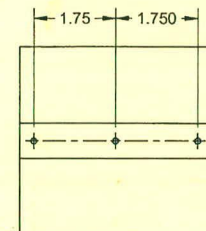
D3905-3 SKIDTUBE PILOT HOLE DETAIL



DETAIL Z
SCALE: 4X



DETAIL X
SCALE: 4X



DETAIL Y
SCALE: 4X

NOTES:

- 1) MATERIAL: MAKE FROM D2500-1-190 EXTRUSION
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY AT FINAL ASSEMBLY
- 7) WEIGHT: N/A

RELEASED
2017-05-08

APPROVED

DESIGN	AJS	DART AEROSPACE USA, INC.	
DRAWN	WK	EUGENE, OR	
CHECKED	VS	DRAWING NO.	REV. E
MFG. APPR.	DD	D3905	SHEET 14 OF 14
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	A119 FLOAT SKIDTUBE ASSY	NTS
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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION		AGAINST DEPARTMENT/PROCESS							
	Rework	☐	Skid-tube	☐	Cross tube	☐	Water Jet	☐	Engineering	☐
	Scrap	☐	Machining	☐	Small Fab	☐	Prod. Eng. Coord.	☐	Quality	☐
	Use-as-is	☐	Thermoforming	☐	Finishing	☐	Rec/Store/Packaging	☐	Other	☐
	Suspected Unapproved	☐	Large Fab	☐	Composite	☐	Supplier	☐		

Date :	Step #:	QTY Effective :	MRB (QSI042) Approval
--------	---------	-----------------	-----------------------

Description Work Order Deviation	Disposition	Completed By
		Lead hand / Supervisor Approval Verification
		QC / QA Coordinator Approval

Root Cause			FAULT CATEGORY		
Environment	☐	No Re-verification	☐	Pressure/Forced	☐
Design	☐	Operator	☐	Bending	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐
Material	☐	Use for Testing	☐	Cuffs	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐
Past Expiry Date	☐	Manufacturing Process	☐		
Misidentified	☐	Past Due	☐	OTHER :	